

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**NRG Sterlington Power LLC
NRG Sterlington Power LLC - Sterlington Power Plant
Sterlington, Ouachita Parish, Louisiana
Agency Interest Number: 93588
Activity Number: PER20030001
Proposed Permit Number: 2160-00104-V2**

I. APPLICANT

Company:

NRG Sterlington Power LLC
268 Solvent Ave
Sterlington, Louisiana 71280

Facility:

Sterlington Power Plant
6310 Horseshoe Lake Rd
Sterlington, Ouachita Parish, Louisiana
Approximate UTM coordinates are 586.117 kilometers East and 3616.86
kilometers North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

The Sterlington Power Plant is located in Sterlington, Ouachita Parish, Louisiana. The facility consists of nine natural gas fired turbines, eight diesel-fired startup generators, one electric startup generator, eight built-in diesel storage tanks, one auxiliary diesel-fired generator, and one demineralized water storage tank.

The turbines/generators can be brought on-line individually on an "as needed" basis to meet electric power demands. Accordingly, the number of turbines/generators operating at any given time may vary from one to nine depending on the electric power demands. The diesel generators will be used for cold startup of the natural gas fired turbines/generators.

The primary emissions from the facility are due to products of combustion associated with the burning of natural gas in the turbines and the burning of diesel in the startup generators. There are minor VOC emissions from the diesel storage tanks.

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The Sterlington Power Plant is a designated Part 70 source.

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application was submitted on June 25, 2003 requesting a Part 70 operating permit renewal and modification for the Sterlington Power Plant. Additional information dated August 21, 2007, August 29, 2007, and September 5, 2007 was also submitted.

Project

In this permit renewal and modification, an emissions cap is requested for the facility's turbines and generators. The emissions cap for all nine turbines allows the use of some or all of the turbines at one time, as long as the total operating time does not exceed 10,000 hours per year. The emissions cap for all eight diesel generators allows the use of some or all of the generators at one time, as long as total generator operation time does not exceed 198 hours per year. Emission limitations will be updated based on the most recent emission factors.

Proposed Permit

Permit 2160-00104-V2 will be the renewal and modification of Part 70 operating permit 2160-00104-V1 for the Sterlington Power Plant.

Permitted Air Emissions

Estimated emissions from the facility in tons per year are as follows:

Pollutant	Before	After	Change
PM ₁₀	65.50	65.58	+ 0.08
SO ₂	1.54	5.41	+ 3.87
NO _x	241.82	242.16	+ 0.34
CO	245.27	245.33	+ 0.06
VOC	37.53	37.62	+ 0.09

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IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Applicability and Exemptions of Selected Subject Items

ID No:	Requirement	Notes
UNF 01 Sterlington Power Plant	Chemical Accident Prevention and Minimization of Consequences [LAC 33:III.Chapter 59]	DOES NOT APPLY – The facility does not meet threshold quantity requirements of any regulated substance. [LAC 33:III.5907.A]
GRP 01 Natural Gas Fired Turbines 1-4; 6-10	Acid Rain Program [40 CFR 72]	EXEMPT – Turbines each have a nameplate capacity of 25 MW and only burn fuels with less than 0.05% sulfur. [40 CFR 72.6(a)(3)(ii)]
	Standards of Performance for Stationary Combustion Turbines [40 CFR 60 Subpart KKKK]	DOES NOT APPLY – The facility was constructed prior to February 18, 2005. [40 CFR 60.4305(a)]
	National Emission Standard for Hazardous Air Pollutants for Stationary Combustion Turbines [40 CFR 63 Subpart YYYY]	DOES NOT APPLY – The facility is not a major source of air toxics. [40 CFR 63.6080]
	Compliance Assurance Monitoring [40 CFR 64]	EXEMPT – The turbines are subject to 40 CFR 60 NSPS Subpart GG, which establishes a continuous compliance determination method for NO _x and SO ₂ emissions. [40 CFR 64.2(b)(vi)]

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ID No:	Requirement	Notes
GRP 02 Diesel Generators 1-4; 6-9	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR 60 Subpart IIII]	DOES NOT APPLY – Diesel generators were manufactured prior to April 1, 2006. [40 CFR 60.4200(a)(3)]

Prevention of Significant Deterioration/Nonattainment Review

Project does not trigger PSD.

Streamlined Equipment Leak Monitoring Program

Unit or Plant Site	Program Being Streamlined	Stream Applicability	Overall Most Stringent Program
Sterlington Power Plant	None	-	-

MACT Requirements

The facility is not a major source of Toxic Air Pollutants pursuant to LAC 33:III.Chapter 51.

Air Quality Analysis

Dispersion Model(s) Used: ISCST3

Pollutant	Time Period	Calculated Maximum Ground Level Concentration	Louisiana Toxic Air Pollutant Ambient Air Quality Standard or (National Ambient Air Quality Standard {NAAQS})
Formaldehyde	Annual	1.895	7.69

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

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Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

There is no permit shield requested in this permit action.

VI. PERIODIC MONITORING

The natural gas turbines under the 99-CAP-01 Emissions Cap (GRP01) are subject to NSPS Subpart GG, which requires NRG to perform the following monitoring activities:

1. Fuel consumption continuous monitoring,
2. Fuel nitrogen and sulfur content monitoring at the frequency and using the method(s) specified in Subpart GG, and
3. Water or steam to fuel ratio monitoring continuously.

Total operating time and total electric power output from the turbines will be monitored.

Total operating time of the diesel generators will be monitored.

The units of the facility are not subject to the requirements of 40 CFR 64 – Compliance Assurance Monitoring (CAM).

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VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H₂S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C (“Prevention of Significant Deterioration of Air Quality”) and D (“Nonattainment New Source Review”).

Nitrogen Oxides (NO_x) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH₄), Ethane (C₂H₆), Carbon Disulfide (CS₂)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM₁₀ – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient

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Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO₂) – An oxide of sulfur.

Sulfuric Acid (H₂SO₄) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.